

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>		Application Number	to be assigned
		Filing Date	February 18, 2004
		First Named Inventor	John Santhoff et al.
		Art Unit	to be assigned
		Examiner Name	to be assigned
Sheet <u>1</u>	of <u>4</u>	Attorney Docket Number	048CIP-120

U. S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
KBJ		US- 3,668,639	06-06-1972	Harmuth	
		US- 3,678,204	07-18-1972	Harmuth	
		US- 3,728,632	04-17-1973	Ross	
		US- 4,641,317	02-03-1987	Fullerton	
		US- 4,979,186	12-18-1990	Fullerton	
		US- 5,146,616	09-08-1992	Tang et al.	
		US- 5,363,108	11-08-1994	Fullerton	
		US- 5,677,927	10-14-1997	Fullerton et al.	
		US- 5,687,169	11-11-1997	Fullerton	
		US- 5,748,891	05-05-1998	Fleming et al.	
		US- 5,920,278	07-06-1999	Tyler et al.	
		US- 6,002,708	12-14-1999	Fleming et al.	
		US- 6,026,125	02-15-2000	Larrick, Jr. et al.	
		US- 6,031,862	02-29-2000	Fullerton et al.	
		US- 6,178,217 B1	01-23-2001	Defries et al.	
		US- 6,275,544 B1	08-14-2001	Aiello et al.	
		US- 6,281,784 B1	08-28-2001	Redgate et al.	
		US- 6,505,032 B1	01-07-2003	McCorkle et al.	
	US- 6,539,213 B1	03-25-2003	Richards et al.		

FOREIGN PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear
KBJ		WO 01/39451 A1	05-31-2001	Multispectral Solutions, Inc	
		WO 01/93434 A2	12-06-2001	XtremeSpectrum, Inc	
		WO 02/31986 A2	04-18-2002	XtremeSpectrum, Inc	

Examiner Signature	<i>[Signature]</i>	Date Considered	8/12/05
--------------------	--------------------	-----------------	---------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.18 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

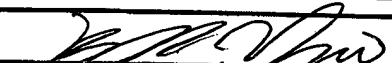
(Use as many sheets as necessary)

Sheet 2 of 4**Complete if Known**

Application Number	to be assigned
Filing Date	February 18, 2004
First Named Inventor	John Santhoff et al.
Art Unit	to be assigned
Examiner Name	to be assigned
Attorney Docket Number	048CIP-120

U. S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
JSH		US- 6,026,125	02-15-2000	Larrick et al.	
		US- 6,690,741	02-10-2004	Frederick et al.	
		US- 2001/0033610 A1	10-25-2001	Chastain	
		US- 2002/0197910	07-19-2002	Shvodian, William M.	
		US- 2002/0206648	07-26-2002	Shvodian, William M.	
		US- 2002/0075972 A1	06-20-2002	Richards et al.	
		US- 2002/0076193 A1	06-20-2002	Melick et al.	
		US- 2003/0436646	05-13-2003	Siwiak, Kazimierz	
		US- 2004/0008729A1	01-15-2004	Rogerson et al.	
		US- 2004/0013127 A1	01-22-2004	Siwiak, Kazimierz	
		US- 2004/0028012A1	02-12-2004	Walker et al.	
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			

FOREIGN PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear
		Country Code ² Number ³ Kind Code ⁴ (if known)			

Examiner Signature		Date Considered	8/12/05
-----------------------	---	--------------------	---------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Application Number	to be assigned
		Filing Date	February 18, 2004
		First Named Inventor	John Santhoff et al.
		Art Unit	to be assigned
		Examiner Name	to be assigned
Sheet 3	of 4	Attorney Docket Number	048CIP-120

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
KB		DI WU, PREDRAG SPASOJEVIC, IVAN SESKAR, "Multipath Beamforming UWB Signal Design Based on Ternary Sequences", 40th Annual Allerton Conference, August 26, 2002, WINLAB, Rutgers University, Camden, New Jersey, USA.	
		HENNING F. HARMUTH, "Applications of Walsh functions in communications", IEEE Spectrum, November 1969, pgs. 82-91, USA.	
		ROBERT FLEMING, CHERIE KUSHER, "Integrated, Low-Power, Ultra-Wideband Transceivers for Distributed Position Location and Communication", Semi-Annual Technical Report Contract J-BFI-94-058, Aether Wire & Location, Inc. July 1995, Nicasio, CA, USA.	
		ROBERT FLEMING, CHERIE KUSHER, "Low-Power, Miniature, Distributed Position Location and Communication Device Using Ultra-Wideband, Nonsinusoidal Communication Technology", Semi-Annual Technical Report Contract J-BFI-94-058, Aether Wire & Location, Inc. July 1995, Nicasio, CA, USA.	
		FERNANDO RAMIREZ-MIRELES, ROBERT A. SCHOLTZ, "N-Orthogonal Time-Shift-Modulated Codes for Impulse Radio", Report from Joint Services Electronics Program Contract F 49620-94-0022, CTMC 1997, IEEE Wireless 98, July 1998, USA.	
		FERNANDO RAMIREZ-MIRELES, "On Performance of Ultra Wideband Signals in Gaussian Noise and Dense Multipath", Paper 99C265, Accepted for Publication in the IEEE Transactions on Vehicular Technology, USC Ultralab, USA.	
		ROBERT A. SCHOLTZ, P. VIJAY KUMAR, CARLOS J. CORRADA-BRAVO, "Signal Design for Ultra-Wideband Radio", Department of Electrical Engineering, University of Southern California, Los Angeles, CA, USA.	
		MOE Z. WIN, ZORAN A. KOSTIC, "Impact of Spreading Bandwidth on Rake Reception in Dense Multipath Channels", IEEE Journal on Selected Areas on Communications. Vol. 17, No. 10, pages 1794-1806, October 1999, USA.	
		MOE Z. WIN, GEORGE CHRISIKOS, NELSON R. SOLLENBERGER, "Performance of Rake Reception in Dense Multipath Channels: Implications of Spreading Bandwidth and Selection Diversity Order", IEEE Journal on Selected Areas on Communications, Vol. 18, No. 8, pages 1516-1525, August 2000, USA.	
		HENNING F. HARMUTH, "Frequency-Sharing and Spread-Spectrum Transmission with Large Relative Bandwidth", IEEE Transactions on Electromagnetic Compatibility, Vol. EMC-20; No. 1, February 1978, USA.	

Examiner Signature		Date Considered	8/12/05
--------------------	---	-----------------	---------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Substitute for form 1449/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Application Number	to be assigned
		Filing Date	February 18, 2004
		First Named Inventor	John Santhoff et al.
		Art Unit	to be assigned
		Examiner Name	to be assigned
Sheet 4	of 4	Attorney Docket Number	048CIP-120

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
<i>JS</i>		MULTISPECTRAL SOLUTIONS, INC., Revision of Part 15 of the Commission's Rules Regarding Ultra-Wideband Transmission Systems" September 12, 2000.	
		ANNA SCAGLIONE, "Differential Direct Sequence Spread Spectrum for Ultra-Wideband Low Power Wireless Microsystems", University of New Mexico, Dept. of EECE, Albuquerque, NM, USA.	
		DAVID WRIGHT & RYAN WINFIELD-WOODINGS, An efficient 2.4 - GHz wireless net for less, EE Times, October 31, 2003, 3 pages.	
		SIEMENS & TEXAS INSTRUMENTS, Generalised Hierarchical Golay Sequence for PSC with low complexity correlation using pruned efficient Golay correlators, 6 pages.	
		ANUJ BATRA ET AL. & TEXAS INSTRUMENTS ET AL., Multi-band OFDM Physical Layer Proposal for IEEE 802.15 Task Group 3a, July 21, 2003, 71 pages.	
		DAVID CYPHER, Coexistence, Interoperability and Other Terms, September 2000, 18 pages.	

Examiner Signature	<i>[Signature]</i>	Date Considered	8/12/05
--------------------	--------------------	-----------------	---------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.
¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.
 This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.